

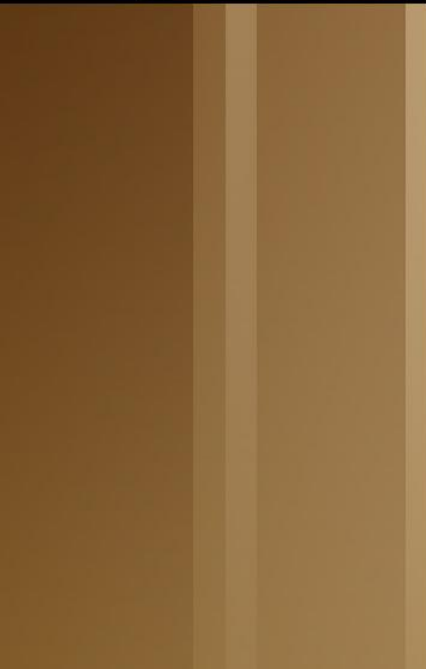


e-Commerce

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e-Commerce - Historical Review

- It appeared about 40 years ago
- 1970s: electronic conduct of business transactions through e-exchange of purchase orders and invoices using the Electronic Data Interchange (EDI) and Electronic Funds Transfer (EFT) standards
- 1980s: credit cards, ATMs, telephone banking, Airline Reservation Systems (Sabre in the US and Travicom in the UK)
- 1990s: Enterprise Resource Planning, Data Mining and Data Warehousing systems
- Today it includes everything, from ordering digital content for immediate online consumption, to ordering conventional goods and services, as well as, services that facilitate other forms of e-commerce



e-Commerce – In general

General concept covering many forms of business transactions or information exchange:

- between Businesses (Business to Business – B2B), usually via EDI (Electronic Data Interchange)
- between Businesses and Consumers (Business to Consumer – B2C)
- between Consumers and Businesses (Consumer to Business – C2B)
- between Business and Government (Business to Government – B2G) as well as G2B, G2G, G2E (Government-to-Employee), G2C (Government-to-Citizen), C2G (Citizen-to-Government)
- Between Consumers (Consumer to Consumer C2C), e.g. eBay, Paypal
- between Businesses and Employees (Business to Employee – B2E) through the use of information technology and communications

Electronic Data Interchange (EDI)

- The exchange of standardized transactions between computers, such as invoices or purchase orders
- EDI was designed as a system which:
 - receives a large amount of information
 - categorizes them
 - offers them to companies in the form of groups
- Great advantage of this type of information processing is the reduction of errors and the minimization of the companies' transactions time needed
- Its major disadvantage is the excessive costs increase due to the use of specialized communication networks



Electronic Data Interchange (EDI)

- Major industries have EDI standards that define the structure and information fields of electronic documents for that particular industry
- More and more companies are abandoning private networks and adopting the Internet to connect with other businesses

e-Commerce - definitions

- Trade in the provision of goods and services carried out at a distance by electronic means, i.e. based on the electronic transmission of data, without the physical presence of the contracting parties (seller-buyer) being necessary
- It includes all online processes: development, promotion, sale, delivery, service and payment for products and services



e-Commerce - definitions

- The exchange of goods achieved through a usually continuous communication by electronic means
- Any form of business transaction in which partners interact by electronic means rather than in person or by direct contact
- e-Commerce can be broadly interpreted to include the exchange of information between businesses or the purchase of goods by businesses or individuals
- Any activity, which includes the operation and interaction of businesses with electronic means, such as the provision of On-Line services

e-Commerce

Increasing the scope of e-exchanges using the Internet

- Electronic funds transfer
- Supply chain management
- Internet marketing
- Online transaction processing
- Electronic Data Interchange, EDI
- Inventory management
- Automation of data collection systems



e-Commerce

Actors:
Government
Suppliers
Traders
Consumers

**Information
Technologies**

Processes:
Marketing
Sales
Payments
Supply
Support

Networks:
Internet
Private Networks

Legislation



e-Commerce



It includes a wide range of business activities and functions such as:

- Making the initial contact between the potential customer and the potential supplier
- Information Exchange
- Support before and after the sale (Information about available products and services, help regarding the use of the product, etc.)
- Sales, Online Payments, Product Distribution
- Shared Business Processes between a company and its partners
- Virtual Companies

e-Commerce

- It affects significantly the structure and processes of trade
- The business processes supported by e-Commerce
 - cross the boundaries of a single company
 - are carried out collaboratively with other partners
 - target a specific market through Virtual Companies
 - Several companies were reorganized to this direction
 - Each company is responsible for a particular part of an overall process



e-Commerce

- For the e-Commerce to be successful, different options than traditional commerce are needed
- For example, for B2C e-Commerce, it is needed:
 - a flexible infrastructure that supports complex and flexible services which can manage customer requests across a highly dynamic network of suppliers
 - The structural elements of this infrastructure must:
 - ensure safety, and
 - provide mechanisms for Search, Advertising, Negotiation, Matchmaking (Matching Demand with Supply), Ordering, Invoicing, Payments, Distribution, Accounting and Customer Support Services, etc.



e-Commerce

- e-Commerce technology is related to many areas of computer science, such as:
 - Databases and transaction processing
 - Interoperability of heterogeneous systems and information sources
 - Intelligent agents, multimedia
 - Security
 - Workflow systems
 - Distributed processing, mobile computing, etc.
- Research in all the above fields is still in progress

Categories of e-Commerce transactions

- Business to Business - B2B
- Business to Consumer - B2C
- Consumer to Consumer - C2C or, Person to Person – P2P
- Mobile Commerce (m-Commerce): e-commerce via wireless access
- Business to Government – B2G
- Consumers to Government – C2G



Features of B2B Applications

- Data exchange
- Orders
- Internal business organization
- Remote collaboration
- Promotion of products to traders, suppliers, etc.
- Payments

Advantages of B2B Applications

- Reduction of time regarding the order service
- Just-In-Time systems for manufacturers (reduces storage and product transportation costs)
- Quick Response for retail systems
- Reduction of workload and of paper used
- Distribution network monitoring
- Strengthening of professional relationships
- Improving the Quality of Services Provided

Benefits of e-Commerce for Suppliers and Consumers

- Global presence / Global selection
- Improved competitiveness / Quality of services
- Providing and Receiving specialized services
- Supply chain reduction / Immediate coverage of needs
- Minimization of production costs / Minimization of prices
- New business opportunities / New products and services

Business Benefits

- Reduced advertising costs
- Reduced transportation costs, especially when it concerns goods which can be transferred online
- Reduced design and production costs
- Developed strategic planning
- More opportunities for niche marketing
- Equal access to markets for everyone
- Access to new markets
- Customer involvement in the product and service innovation

e-Commerce

Eight unique features of e-Commerce technology



Range

- Technology is diffused through national borders around the world
- Trade transcends national and cultural borders without meeting any barriers or facing any change
- The potential market size includes billions of consumers and businesses worldwide



Wealth

- It supports video, audio and text messages
- It is possible to broadcast long text, audio and video messages to a large number of people, simultaneously
- Video, audio and text marketing messages can be integrated into a single marketing message over a single consumer experience

Information Density

- A large increase in information density in the overall quantity and quality of information available to all market participants
- Greater price transparency
- Greater costs transparency
- It enables traders to differentiate prices



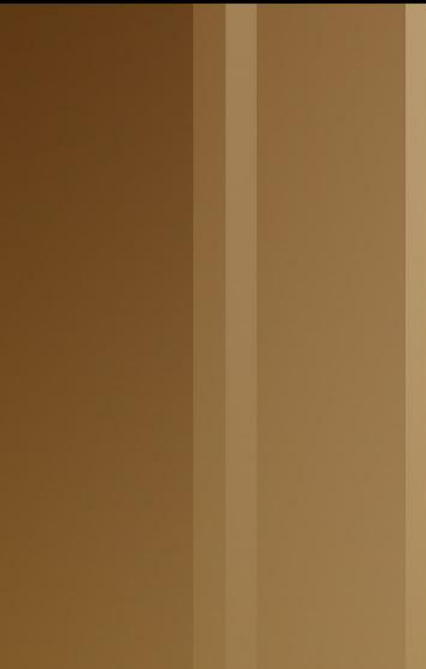
Ubiquity

- Internet/Web technology is available everywhere and anytime
- The market has escaped its time and geographical limitations to become a "virtual market"
- It enhanced customer convenience and reduced purchasing costs



Single Standards

- A unique set of technology standards, the Internet Standards
- Different computer systems communicate easily with each other
- Reduced entry market costs, i.e. the costs covered by merchants in order to bring their products to the marketplace
- Reduced search costs, i.e. the effort put by consumers in order to find the suitable products





Social Technology



- Technology promotes the creation of user-generated content, as well as, the social networking
- New social and business models on the Internet enable users to create and distribute their content and support the social networks



Personalization/Customization

- Technology enables the modification of messages and products
- Personalized messages can be sent to individuals, as well as, to groups
- Products and services can be tailored to individual preferences



Interactivity

- Technology works in a bidirectional way with the user
- Consumers engage in a dialogue; such a dialogue dynamically tailors this experience to the individual
- The consumer participates in the process of product delivery to the market



Information Asymmetry

- A situation in which the trading parties do not share the same information about a transaction
- The bargaining power of the party that possesses important information about this transaction is greater
- The Internet reduces this information asymmetry



e-Payment Systems – a Review

- Cybercash
- Cybercoin
- eCash
- First Virtual
- Millicent
- Mondex
- NetBill
- Netcash
- Netcheque
- SET
- Traditional Payment Methods (Credit cards, Cash on Delivery, etc.)



Payment Systems Requirements

- Payments Guarantee
- Technical Requirements
- Relationship with the customer
- Great Spread



Types of Electronic Payment Systems (1)

1. e-Wallet

- Stores credit card information, as well as, cardholder identification information, automatically, entering the buyer's name, credit card number, and shipping information for a specific purchase

2. Micropayment systems

- Accumulated debit balance digital payment systems which allow for periodical payments via credit card or phone bill

Types of Electronic Payment Systems (2)

3. Stored value payment system

- They enable online payments based on the value stored in an online digital account
- They can be offered by merchandisers, or to be peer-to-peer payments (PayPal)

4. Digital checks


- They extend the functionality of current accounts for network payments

5. Online presentation and bill payment systems

- Bills payment via online money transfer, or credit cards



e-Payment Systems



Pre-Paid	Pay-Now	Pay-Later
Hardware-based	Cash on Delivery	Credit Card
Quick, GeldKarte	Debit instruments	Unencrypted
Software-based	Mobile Payments	SET
Paysafecard	Paybox	SSL
MicroMoney	Mobipay	Credit Transfer
(eCash)	Streetcash	Billing/Collection Systems
(CyberCoins)	(Payitmobile)	Net900
	eMail-Payments	Firstgate
	PayPal	Paysafekey



Online Payment Systems

- **Digital cash:** systems that generate personal payment forms
- **Online stored value systems:** systems based on prepaid cards, checking accounts
- **Digital accumulating balance payment systems:** recurring payment method
- **Digital credit accounts:** expansion of the online credit card system
- **Digital checking:** conducting digital checks for remittances and expanding the functionality of bank checking systems

Innovative Internet Payment Systems

- **Software-based prepaid payment services**
 - Paysafecard (a prepaid card that allows you to make online transactions and create payments within your account)
- **Mobile Payments**
 - Paybox (mobile payments, Sybase mCommerce 365 is an end-to-end mobile commerce)
 - Mobipay (mobile payments)
- **eMail Payments**
 - Paypal (<http://www.paypal.com/>) - you can create an account through Internet and conduct secure financial transactions



PayPal (e-mail payment system)

- It became known in late 1999
- Widely accepted solution advertised by websites with first preference through e-bay
- Registration is made through an online form and the buyer's card or bank account details are given
- There is an intermediary who is responsible for the transactions details (trustee-Paypal). The intermediary holds these details and informs the supplier via e-mail that the money is available; when a payment needs to be made, if the person being paid does not have a PayPal account, she/he should create an account in order to receive the payment